

# Peachtree Dunwoody Road at Windsor Parkway Intersection Improvement (Project TS109)

June 18, 2019

Mayor and City Council Meeting – Work Session



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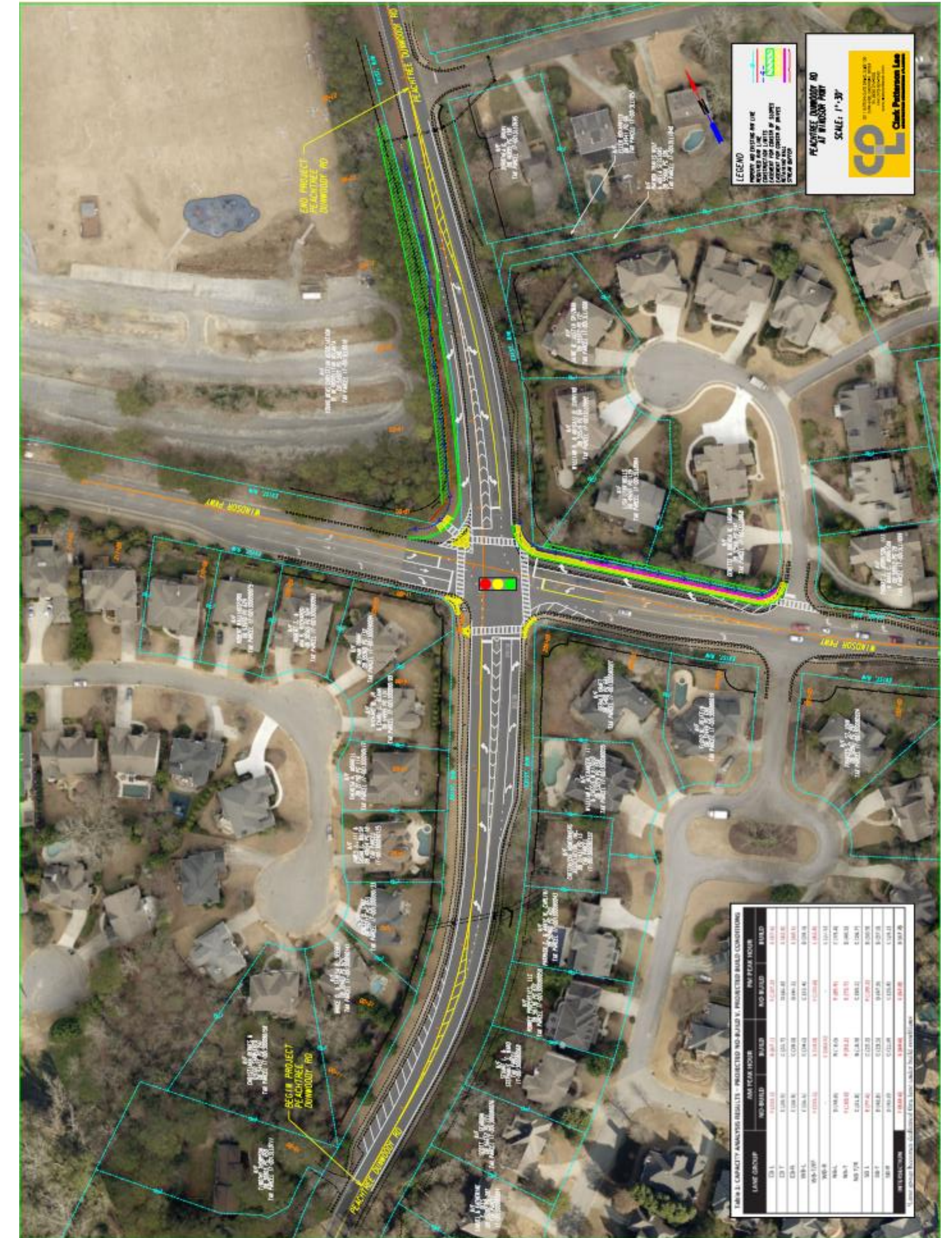
# TS109 Peachtree-Dunwoody at Windsor Parkway Update

- This project began Fall 2018 as part of the TSPLOST Traffic Efficiency Program
- The intersection has been studied and concepts have been considered
- A PIOH occurred at City Springs on February 7th
- The TSPLOST Program Update on March 5th included a status update for the project
- This presentation will provide the results of the traffic study and PIOH and request Mayor and Council guidance on the path forward to move this project into the Design phase.



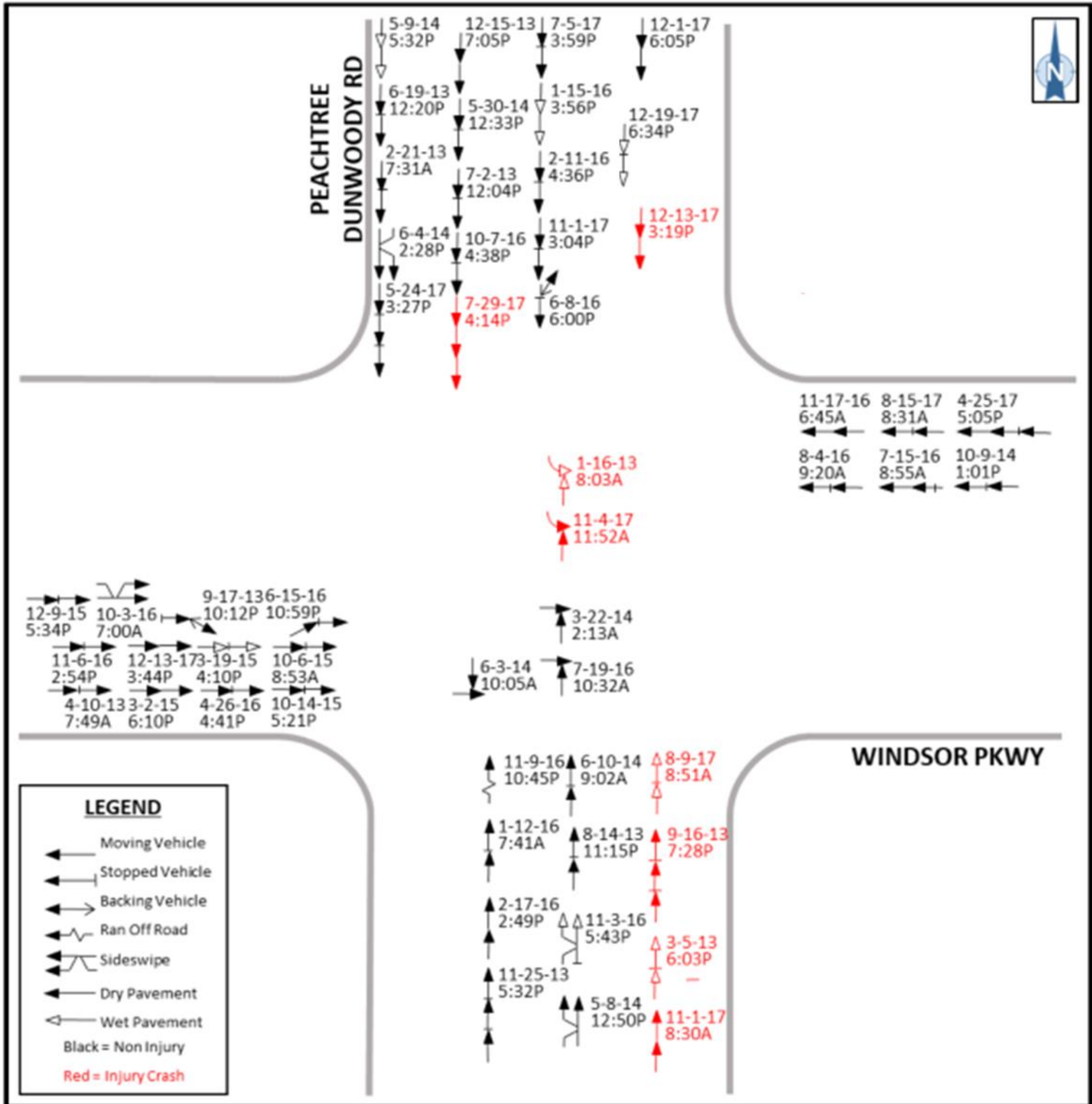
# TS109 Peachtree-Dunwoody at Windsor Parkway

- Reducing crashes and improving pedestrian safety are important facets of this project. There will also be operational improvements throughout the day.
- The City and our consultant, Clark Patterson Lee (CPL), have conceptually identified the need for pedestrian improvements, signal upgrades, and extending the NB and SB left-turn lanes, and a right turn lane on westbound Windsor Parkway
- There were 53 crashes in the last 5 years – mostly rear-end with 13 injuries. Most of these were on Peachtree Dunwoody Road
- Budget: \$750,000
- Construction: Spring 2020



# TS109 – Traffic Efficiency

YEAR	TOTAL CRASHES	INJURY CRASHES/ INJURIES	FATALITIES	VEHICLE COLLISION WITH OTHER VEHICLE				NON-VEHICLE COLLISION
				RIGHT-ANGLE	HEAD ON	REAR END	SIDE-SWIPE	
2013	11	3/3	0	2	0	9	0	0
2014	8	0/0	0	2	0	4	2	0
2015	5	0/0	0	0	0	5	0	0
2016	16	0/0	0	3	0	10	2	1
2017	13	5/9	0	1	0	12	0	0
Total	53	8/12	0	8	0	40	4	1



- Total Crashes in 2016-2017 showed a significant increase over prior years
- Injury crashes peaked in 2017 – especially Rear-End crashes
- The majority of crashes, and all injury crashed (red) were along Peachtree Dunwoody
- This project is designed to implement mitigation measures to reduce crash frequency and severity

[illegible]

Comments were compiled and Concept modifications were considered.

- All liked the improved pedestrian accommodations
- A majority liked the lane modifications on Peachtree-Dunwoody
- A majority objected to the right turn lane on WB Windsor

# TS 109 Concept Development Post-PIOH



- The Original Build Concept includes a Right Turn lane on westbound Windsor Parkway.
- Residents had concerns on the impacts of their neighborhood entrances and to their properties
- The City recognizes the traffic patterns in this area may be influenced by the nearby 285/400 construction being undertaken by GDOT

# TS 109 Concept Development Post-PIOH



- The City asked our Consultant, Clark Patterson Lee, to develop a Revised Build Concept to analyze removing the Right Turn lane on westbound Windsor Parkway (as a near term measure).

# TS 109 Concept Development – Options Summary

## No-Build (Current)



## Original Build (PIOH)



## Revised Build



# TS109– Traffic Efficiency

**Table 1: CAPACITY ANALYSIS RESULTS – PROJECTED NO-BUILD V. PROJECTED BUILD CONDITIONS**

LANE GROUP	AM PEAK HOUR - LOS			PM PEAK HOUR - LOS		
	NO-BUILD	BUILD	REV. BUILD	NO-BUILD	BUILD	REV. BUILD
EB-L	F (215.1)	E (67.1)	F (215.1)	F (107.2)	E (57.6)	F (103.1)
EB-T	C (29.9)	C (31.7)	C (29.9)	D (44.8)	E (62.8)	D (47.1)
EB-R	C (28.9)	C (29.0)	C (28.9)	D (44.2)	E (60.1)	D (46.6)
WB-L	C (26.6)	C (24.6)	C (26.6)	C (32.4)	D (39.3)	D (37.4)
WB-T/R <sup>1</sup>	F (235.1)	E (59.0)	F (235.1)	F (101.6)	E (62.8)	F (106.6)
WB-R	-	F (163.5)	-	-	C (27.5)	-
NB-L	D (38.6)	B (16.0)	D (38.6)	E (65.9)	C (33.4)	E (69.6)
NB-T	F (160.0)	F (93.2)	F (160.0)	E (73.7)	D (46.5)	E (73.5)
NB-T/R	C (31.8)	B (15.9)	C (31.8)	C (30.1)	C (26.7)	C (34.2)
SB-L	E (77.4)	C (22.2)	E (77.4)	F (109.2)	D (50.9)	F (103.9)
SB-T	D (48.8)	C (23.5)	D (48.8)	D (47.9)	D (37.0)	D (47.3)
SB-R	D (45.0)	C (21.9)	D (45.0)	C (26.8)	C (24.1)	C (29.2)
INTERSECTION	F (132.6)	E (69.6)	F (132.6)	E (67.0)	D (47.2)	E (67.8)

# Original Build Concept versus Revised Build Concept

From an engineering standpoint, the Original Build is a full level of service better than the Revised Build option and reduces delay by 25-50% or more. However there are considerations to discuss before selecting the Concept to Design

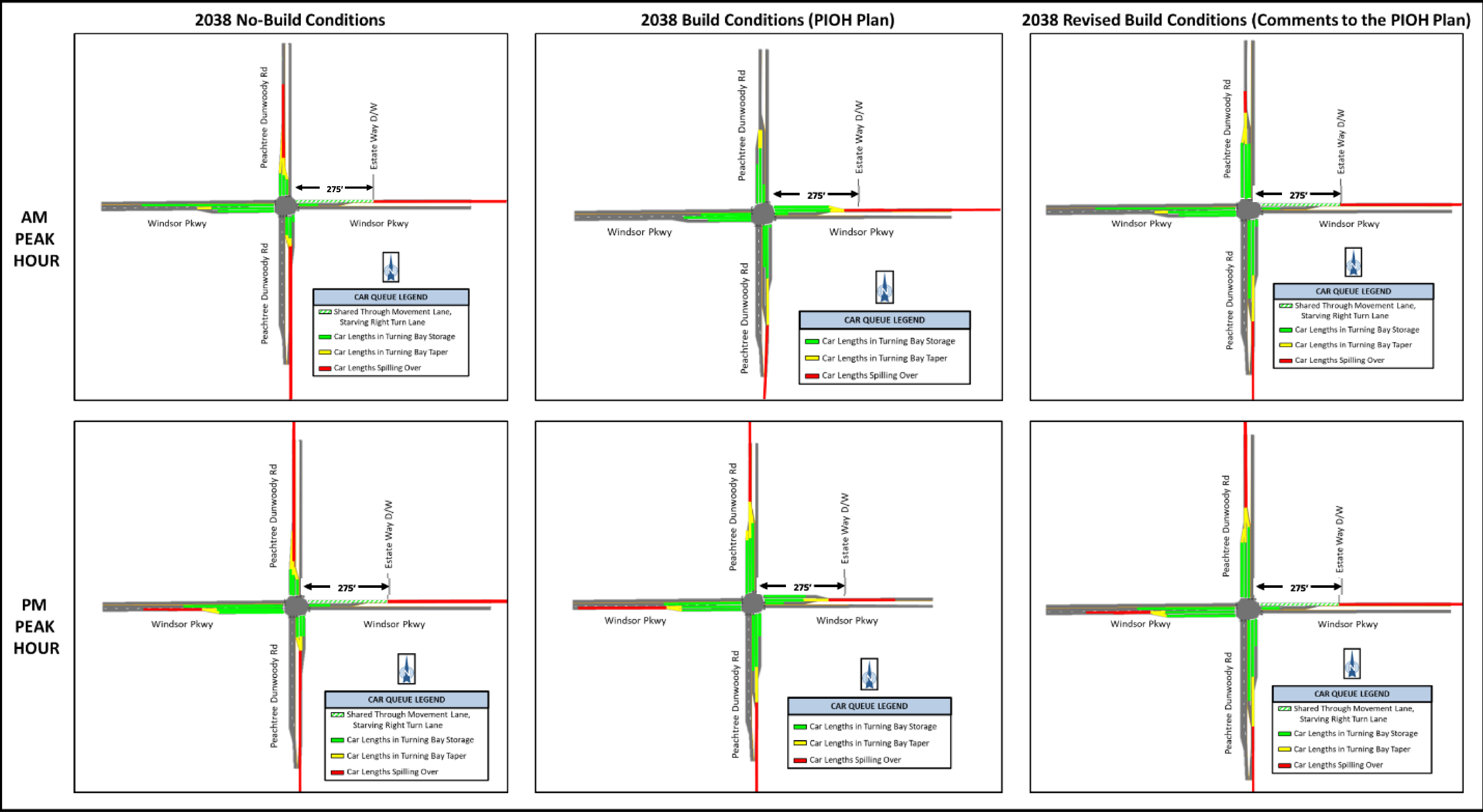
- The LOS and Traffic Operations of the Original Build are **significantly better** than the No-Build condition during the AM and PM Peak hours, which included the right turn lane on westbound Windsor Parkway. The Original Build Concept improves intersection safety as well
- With either the Original Build or Revised Build Concepts, the project will offset the northbound and southbound left turn lanes on Peachtree Dunwoody which will increase the sight distance and help with operations. Drivers will be able to see opposing vehicles more easily when making a left turn, resulting in an expected decrease in crash rates
- With either the Original Build or Revised Build Concepts, lengthening the left turn storage on Peachtree Dunwoody will allow for deceleration in the turn lanes versus the current deceleration in the through lanes caused by the existing short turn bay lengths. This will slightly improve the operation of the through movements on Peachtree Dunwoody throughout the day

# Original Build Concept versus Revised Build Concept

- The Revised Build reflects an approach that primarily focuses on improving intersection safety, while leaving the option to add the right turn lane after the outcome of the 285/400 project is better understood
- Extending the left turns in the Revised Build Concept should improve the operation of the intersection during other hours throughout the day when the northbound and southbound lanes are not be affected by the queuing lengths
- The LOS of the Revised Build in the AM and PM peak hours is **not improved overall**, from the No-Build condition. However, *the Revised Build serves more vehicles during each signal cycle versus the No-Build condition*. The overall Traffic Operation of the Revised Build **shows improvement** over the No-Build condition throughout most of the day

# Original Build Concept vs Revised Build Concept (cont.)

Figure 2: CAR QUEUE LENGTH MATRIX – PROJECTED NO-BUILD V. PROJECTED BUILD CONDITIONS



# Original Build Concept vs Revised Build Concept (cont.)

- On Peachtree Dunwoody, during peak hours, queuing vehicles spilling into through lane or in turn lane tapers are at risk for rear end and side swipe crashes.
- The Revised Build reduces the length of these queues vs the No-Build Option on Peachtree Dunwoody Road
- Both the Original Build and the Revised Build have an Engineering Estimate from our Consultant within the budget.
  - Original Build - \$600K (includes Windsor RT lane)
  - Revised Build - \$500K (excludes Windsor RT lane)

# TS 109 Plan Summary

The *Concept* plan to move into Design includes the following:

1. Restripe both the north and south directions of Peachtree Dunwoody Road to significantly lengthen left turn queue storage
2. Widen southbound Peachtree Dunwoody Road to accommodate the additional left turn storage – requiring ROW from the YMCA
3. Restriping pavement and install new overhead lane assignment signs to improve the transition into the left turn lane on eastbound Windsor, currently a trap lane.
4. Add Pedestrian accommodations throughout – ADA ramps and crosswalks
5. Align the sidewalk on the south side of Windsor east of the intersection with the TS164 project sidewalk (in ROW status) to the east. Include the new ADA ramp and crosswalk at Crestwicke Pointe in this project
6. Upgrade traffic signals, including the addition of fiber communication to the intersection and an HD camera to enable remote monitoring
7. Add a right turn lane on westbound Windsor Parkway as part of this project; (or)  
Retain the ability to add this right turn lane in a future phase – re-evaluate the traffic condition after 285/400 reconstruction and re-establishment of a new baseline traffic pattern

# Next Steps

- Choose whether to include the westbound right turn lane on Windsor Pkwy
- Final Design/ROW Plans – June 2019 - July 2019
- ROW/Easement Acquisition (1 parcel) – August 2019 - October 2019
- Utility Relocations – October 2019 – January 2020
- Road Construction – February 2020 – June 2020